

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) A recording medium including recorded data, comprising:

~~an information area, the information area including~~ a first region for ~~the recorded data a~~
main data; and

a second region for copy protection information for use in decrypting the ~~recorded~~ main
data, wherein said second region ~~including a~~ includes a plurality of data unit units including first
data unit and subsequent data units, the first data unit including a first portion having first data
encoded in straight type and ~~second portion~~ subsequent data units including data encoded in
straight type and data encoded in wobbled type respectively, the subsequent data units having
said copy protection information ~~encoded in wobbled type by bi-phase modulation, and~~

wherein the first data unit includes sync data portion and frame data portion encoded in
straight type respectively, and each subsequent data unit includes sync data portion encoded in
straight type and frame data portion encoded in straight type and wobbled type.

2. (Currently Amended) The recording medium according to claim 1, wherein the data portion
encoded in wobbled type comprises said copy protection information ~~prevents illegal copying of~~
~~the recorded data and is encoded in wobbled pits,~~ said copy protection information being a
decryption key for decrypting encrypted main data.

3. (Currently Amended) The recording medium according to claim 1, wherein ~~the recorded data is recorded as pits formed along tracks, wherein a frame sync signal indicative of the start of a data frame is encoded in straight pits and at least a portion of said copy protection information is positioned after the frame sync signal and encoded in wobbled pits shifted from the track center to the left and/or right~~ said copy protection information is comprised of data bit "0" and data bit "1" encoded by a predetermined period, and wherein each data bit is distinguished from each other by a transition direction within the predetermined period.

4. (Cancelled)

5. (Currently Amended) The recording medium according to claim 3, wherein the predetermined period is 66T or 68T and a length of the straight pits and a length of the wobbled pits depends on type in the frame data portion of each subsequent data unit is determined depending on the predetermined period ~~at least one of a number of pits assigned to a single bit, a length of the frame synch signal, a length of the information, and a time required for detecting the frame sync signal created by said straight pits.~~

6. (Cancelled)

7. (Cancelled)

8. (Cancelled)

9. (Cancelled)

10. (Cancelled)

11. (Cancelled)

12. (Currently Amended) A method of reproducing data from a recording medium, comprising:

detecting copy protection information for use in decrypting ~~the~~ a main data from second region of the recording medium, to reproduce the main data recorded on first region of the recording medium, wherein said ~~copy protection information is recorded in a region of the recording medium, the region including a data frame, the data frame including a first portion having first data encoded in straight type and a second portion having said copy protection information encoded in wobbled type by bi-phase modulation~~ second region includes a plurality of data units including first data unit and subsequent data units, the first data unit including data encoded in straight type and subsequent data units including data encoded in straight type and data encoded in wobbled type respectively, the subsequent data units having said copy protection information, and

wherein the first data unit includes sync data portion and frame data portion encoded in straight type respectively, and each subsequent data unit includes sync data portion encoded in straight type and frame data portion encoded in straight type and wobbled type; and

controlling a decryption of the main data recorded on data-area the first region based on the detected copy protection information.

13. (Currently Amended) A method according to claim 12, wherein said detecting includes detecting a frame sync signal indicative of the start of a each subsequent data frame from an RF

~~reproduced signal created by pits formed along tracks existing on the recording medium~~ unit, the frame sync signal being included in the sync data portion.

14. (Currently Amended) A method according to claim 13, wherein said detecting of the copy protection information occurs a fixed period after the frame sync signal is available.

15. (Currently Amended) A method according to claim 12, wherein said detecting of the copy protection information includes integrating a push-pull signal created by a difference between beams reflected ~~by left and right portions around a track center~~ to a photo detector and producing ~~an output~~ each data bit based on the integrated value.

16. (Currently Amended) A method according to claim 15, wherein said integrating ~~begins~~ is performed for a fixed period after detection of a frame sync signal.

17. (Currently Amended) A method according to claim 15, wherein said integrating samples the push-pull signal and adds the sampled values such that for half a prescribed integration time interval, sampled values are added and for half a prescribed integration time interval, sampled values are added with sign inversion.

18. (Currently Amended) A method according to claim 12, wherein said detecting of the copy protection information includes determining ~~a value of a~~ one of data bit "0" and "1" based on an integrated value.

19. (Currently Amended) A method according to claim 18, wherein said determining includes outputting a valid bit value if an absolute value of the integrated value exceeds a threshold level.

20. (Cancelled)

21. (Currently Amended) A method of recording data on a recording medium, comprising:

generating ~~the~~ a copy protection information for use in decrypting ~~the~~ a main data;

encoding ~~the copy protection information as~~ a plurality of data unit units including first data unit and subsequent data units, the copy protection information being included in the subsequent data units, wherein the first data unit is encoded in straight type and the subsequent data unit including units include a first portion ~~having first data~~ encoded in straight type and a second portion having said copy protection information encoded in wobbled type ~~by bi-phase modulation~~ respectively, the first portion including sync data and a predetermined portion followed by the second portion encoded in the wobbled type; and

recording the copy protection information on an specific area of the recording medium.

22. (Currently Amended) A method according to claim 21, wherein the copy protection information is generated as a decryption key and the copy protection information is comprised of data bit "0" and data bit "1" encoded by a predetermined period, and

wherein each data bit is distinguished from each other by a transition direction within the predetermined period.

23. (Currently Amended) A method according to claim ~~21~~ 22, wherein ~~the copy protection information is spread spectrum encoded and encoded in wobbled pits~~ the predetermined period is

66T or 68T and a length of the straight type in the predetermined portion of each subsequent data unit is determined depending on the predetermined period.

24. (Cancelled)

25. (Currently Amended) An apparatus for reproducing data from a recording medium, ~~said apparatus utilizing copy protection information for use in decrypting the data, to reproduce the data,~~

~~said apparatus comprising :~~

~~a detector detecting the~~ configured to detect a copy protection information recorded on second region of the recording medium to reproduce a main data recorded on first region of the recording medium, wherein ~~said copy protection information is recorded in a region of the recording medium, the region including a data frame, the data frame including a first portion having first data encoded in straight type and a second portion having said copy protection information encoded in wobbled type by bi-phase modulation~~ second region includes a plurality of data units including first data unit and subsequent data units, the first data unit including data encoded in straight type and subsequent data units including data encoded in straight type and data encoded in wobbled type respectively, the subsequent data units having said copy protection information, and

wherein the first data unit includes sync data portion and frame data portion encoded in straight type respectively, and each subsequent data unit includes sync data portion encoded in straight type and frame data portion encoded in straight type and wobbled type; and

a signal processor for decrypting configured to decrypt the main data by utilizing the copy protection information detected from the detector.

26. (Currently Amended) ~~An~~ The apparatus according to ~~claims~~ claim 25, wherein said detector including includes a frame ~~synch~~ sync detector for ~~receiving an RF signal~~ configured to detect a frame sync signal from the sync data portion and a ~~bandpass~~ filter for ~~receiving~~ configured to filter a push-pull signal.

27. (Cancelled)

28. (Cancelled)

29. (Currently Amended) ~~An~~ The apparatus according to ~~claims 28~~ claim 25, wherein said detector further including includes an integrator for ~~integrating~~ configured to integrate the filtered push-pull signal output from the filter, in accordance with ~~the~~ a reference timing signal, the reference timing signal being generated from a timing generator.

30. (Currently Amended) ~~An~~ The apparatus according to ~~claims~~ claim 29, wherein said detector further including includes a bit detector for ~~detecting~~ configured to detect a bit output by data bit "0" or "1" in accordance with an integrated value from the integrator, ~~synched by the reference timing signal output by the timing generator and outputting the bit output, if valid.~~

AMENDMENTS TO THE DRAWINGS

The attached sheet of drawings includes changes to Figures 1, 2 and 3. These sheets, which include all of Figures 1-4, replace the original sheets including Figures 1-4.

Attachment: Two (2) Replacement Sheets